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# Visitor Use Formulas

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## Formulas

You will be able to . . .

- Explain how the RMIS database uses formulas,
- Develop a formula from observational data,

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## Formulas

You will be able to . . .

- Explain the different methods for counting overnight use,
- Create and edit a formula,

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## Formulas

You will be able to . . .

- Apply the corridor concept when developing formulas for rivers, roads, trails, areas, and SRPs,
- Use the Master Formula List when creating multiple formulas.

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# What are Formulas?

# What are Formulas?

Formulas are how the RMIS program takes your visitor use estimates and . . .



# What are Formulas?

. . . accounts for the time visitors spend participating in different activities and converts this into visitor hours and visitor days.



# What are Formulas?

A RMIS formula consists of three parts

- Activity - (hiking, boating, target shooting)
- Average Hours – the average amount of time spent doing that activity (0.5 hr, 3hrs, 12hrs)
- Percent Participation – what percent of the visitors participate in this activity (10%, 80%)





# What are Formulas?

## Simple Formula

Visitor Activity	Average Hours	Percent Participation
Hiking	0.5	100%

Not everyone hikes for 30 minutes. It could be  $\frac{1}{2}$  the people hike for 45 minutes and  $\frac{1}{2}$  hike for 15 minutes. The average time spent hiking is 30 minutes (0.5 hrs).

How does RMIS  
use Formulas?

# What are Formulas?

## Simple Formula

Visitor Activity	Average Hours	Percent Participation
Hiking	0.5	100%

This formula says - All the people that visit hike for  $\frac{1}{2}$  hour.

# What are Formulas?

## Simple Formula

Visitor Activity	Average Hours	Percent Participation	Visitors
Hiking	0.5	100%	2,320

We estimate that annually 2,320 people visit.

# What are Formulas?

## Simple Formula

Visitor Activity	Average Hours	Percent Participation	Visitors	Visitor Hours
Hiking	0.5	100%	2,320	1,160

The RMIS program calculates the number of visitor hours.

Visitor Hour =

Avg. Hours x Percent Participation x No. of Visitors  
(0.5 hrs. x 100% x 2,320 Vis. = 1,160 visitor hours.)

# What are Formulas?

## Simple Formula

Visitor Activity	Average Hours	Percent Participation	Visitors	Visitor Hours
Hiking	0.5	100%	2,320	1,160

The RMIS program also calculates the number of visitor days.

Visitor Day = 12 visitor hours  
(1,160 visitor hours/12 = 97 Visitor Days)

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# Developing a Formula from Observations

**Picnicking**

**Swimming**



**Fishing**



- **Picnicking** – Average time: 30 minutes,  $\frac{2}{3}$  people participate (60%).
- **Swimming** – Average time: 45 minutes,  $\frac{1}{4}$  people participate (25%).
- **Fishing** – Average time: 1  $\frac{1}{2}$  hour,  $\frac{1}{2}$  people participate (50%).

Write out the formula in a chart for later use.

Visitor Activity	Average Hours	Percent Participation
Picnic	0.5	60%
Swimming	0.75	25%
Fishing	1.5	50%

With this information, we can build our formula  
in the RMIS program.

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# Formula Development Philosophies



There are two types of recreation use that occurs on public land

- Day Use
- Overnight Use

Day Use Formulas are pretty straightforward to build:

The formula should . . .

- Include the main activities, and
- Reflect the type and proportion of use that occurs.

Day Use Formulas are pretty straightforward to build:

The total number of visitor hours for the formula should be about the same as the average length of stay.

# Formula Development

Example: A day use site has two trails - a hiking trail and a mtn. biking trail. Half (50%) the users hike and half (50%) mtn. bike. Each user stays an average of one (1) hour. Our formula would look like this:

Visitor Activity	Average Hours	Percent Participation
Hiking	1	50%
Mountain Biking	1	50%

# Formula Development

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If we add the average hours for the site, we get 2 hours which is twice as long as the average length of stay.

Visitor Activity	Average Hours	Percent Participation
Hiking	1	50%
Mountain Biking	1	50%
Total	2	100%



# Formula Development

But if we look at the visitor hours per user (Hours x Percent Participation) we get one (1) visitor hour.

Visitor Activity	Average Hours	Percent Participation	Visitor Hours
Hiking	1	50%	0.5
Mountain Biking	1	50%	0.5
Total	2	100%	1

## Overnight Use Formulas

This is where philosophies diverge..

**Philosophy 1** – says that visitors should be counted each day regardless of how long they stay. The formula should look similar to a Day Use formula except the visitor hours will add up to around 24.

## Overnight Use Formulas

This is where philosophies diverge..

**Philosophy 2** – says that visitors should be counted once during their entire stay. The formula's visitor hours will be about the same as the average length of stay.

## **Philosophy 1** Example:

A large campground is located on a lake. Visitors typically show up around noon, spend two nights, and leave the third day at noon; a total of 48 hours. They usually participate in several water related activities, walk around exploring the area near camp, spend time socializing at camp, eat meals, and sleep. The **Philosophy 1** formula might look like this for each visitor:

# Formula Development

## Philosophy 1 Example:

Visitor Activity	Average Hours	Percent Participation	Visitor hours
Camping	15	100%	15
Picnic	2.5	100%	2.5
Swimming	1	25%	0.25
Fishing	5	50%	2.5
Hiking	4	50%	2
General Water Play	2	80%	1.6
Totals	29.5		23.85

## **Philosophy 1** Example (continued):

Eighteen groups of campers (60 people total) show up mid-day Tuesday and leave mid-day Thursday. We count the number of visitors at the end of each day over the three day period.

Day 1 – 60 people. Day 2 – 60 people. Day 3 – 0 people (everyone leaves). We report 120 visits in RMIS. The RMIS program calculates the number of visitor hours and visitor days as follows:

## **Philosophy 1** Example (continued):

120 visits x 23.85 visitor hours/visit = 2,862  
visitor hours

2,862 visitor hours / 12 = 238.5 visitor days

## **Philosophy 2** Example:

A large campground is located on a lake. Visitors typically show up around noon, spend two nights, and leave the third day at noon; a total of 48 hours. They usually participate in several water related activities, walk around exploring the area near camp, spend time socializing at camp, eat meals, and sleep. The **Philosophy 2** formula might look like this for each visitor:



# Formula Development

## Philosophy 2 Example:

Visitor Activity	Average Hours	Percent Participation	Visitor hours
Camping	30	100%	30
Picnic	5	100%	5
Swimming	2	25%	0.5
Fishing	10	50%	5
Hiking	8	50%	4
General Water Play	4	80%	3.2
Totals	59		47.7

## **Philosophy 2** Example (continued):

Eighteen groups of campers (60 people total) show up mid-day Tuesday and leave mid-day Thursday. We count the number of visitors when they arrive and do not count any more for the three day period. Day 1 – 3; 60 people. We report 60 visits in RMIS. The RMIS program calculates the number of visitor hours and visitor days as follows:

## **Philosophy 2** Example (continued):

The RMIS program calculates the number of visitor hours and visitor days as follows:

$$60 \text{ visits} \times 47.7 \text{ visitor hours/visit} = 2,862 \text{ visitor hours}$$

$$2,862 \text{ visitor hours} / 12 = \underline{238.5 \text{ visitor days}}$$

# Formula Development

Even though we reported different numbers of visits, each formula calculates the same number of visitor hours and visitor days for the campground. However, if we look at the number of visitors to the campground in the first case we report 120 visits and in the second 60 visits.

	Visits	Visitor Hours	Visitor Days
<b>Method 1</b> <b>(Count Vis. Each Day)</b>	120	2,862	238.5
<b>Method 2</b> <b>(Count Vis. Once)</b>	60	2,862	238.5

# Formula Development

	Visits	Visitor Hours	Visitor Days
Method 1 (Count Vis. Each Day)	120	2,862	238.5
Method 2 (Count Vis. Once)	60	2,862	238.5

If you intend to compare visits between recreation areas, it is important to know how the visits are being recorded. A more accurate comparison measure would be visitor days.

# Formula Development

If you have a campground where the use during the day occurs outside the campground, record that day use where it occurs. Only record the use in the campground in the campground formula. Your formula's visitor hours may only add up to 10 -12 hours.

Visitor Activity	Average Hours	Percent Participation	Visitor hours
Camping	11	100%	11
Picnic	2	100%	2
Totals	13		13

# Formula Development

Visitor Activity	Average Hours	Percent Participation	Visitor hours
Camping	11	100%	11
Picnic	2	100%	2
Totals	13		13

Use occurring outside the campground, such as hunting or OHV riding, should be recorded at another site or the dispersed area portion of the RMA.

## Which Method Do I Use?

### Method 1 – (Counting Visitors Each Day)

Will work best in situations where you have the ability to accurately count the number of visitors each day.

Example: Campground with a host or an area with entrance station.



## Which Method Do I Use?

### Method 2 – (Counting Visitors Once)

Will work best if you have periodic counts and have an estimate of the average length of stay.

Example: Campground with no-host and you rely on fee envelopes for counts or a river put-in for multi-day trips.

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# Creating and Editing Formulas

We will use a site in our example for creating a formula. The process for creating formulas for rivers, roads, trails, area designations, and SRPs is similar but will be covered separately in the Corridor Section.

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# Switch to RMIS Program

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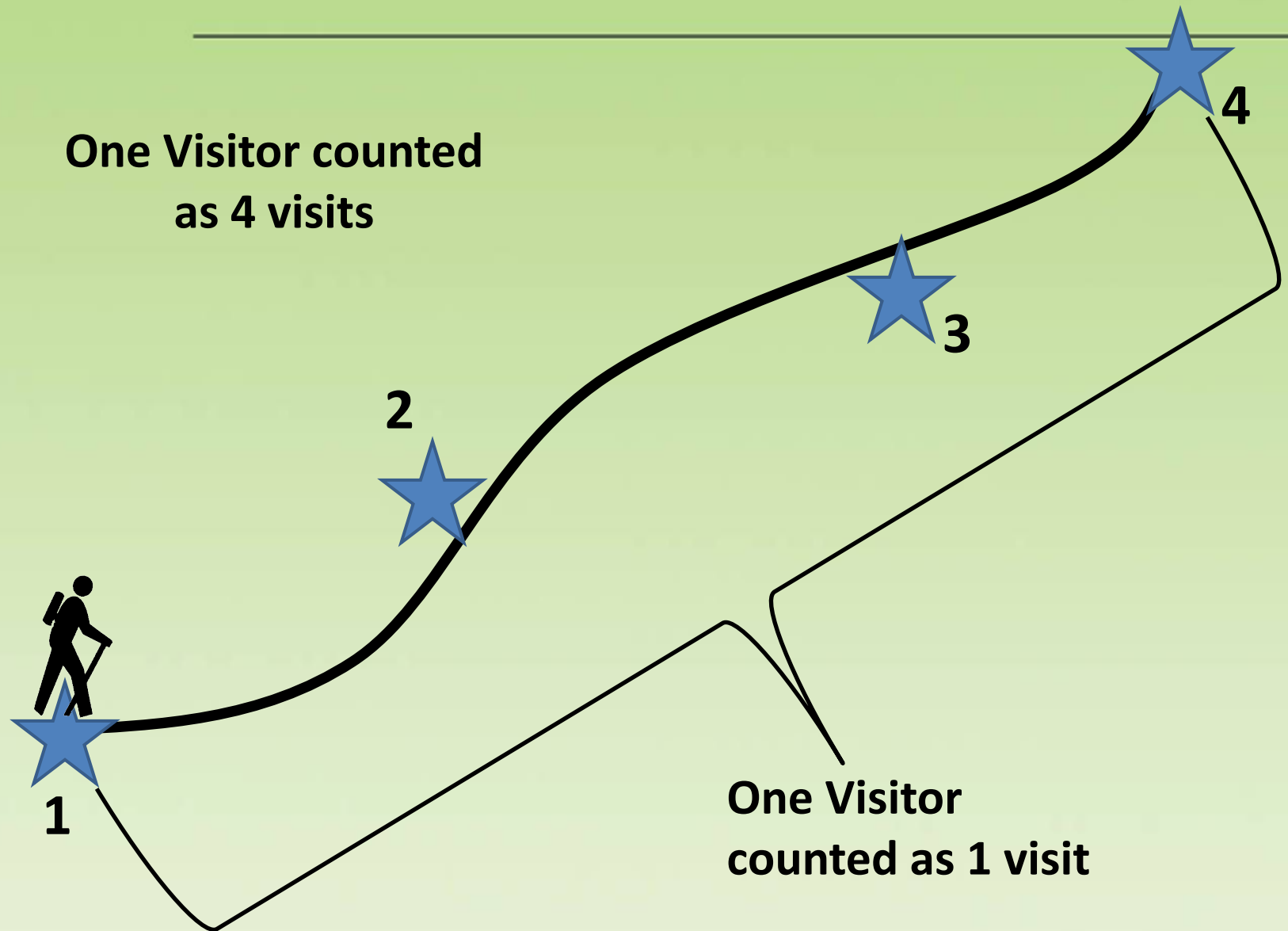
# Corridor Formulas

Rivers, Roads, Trails, and  
Area Designations

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# Corridor Concept

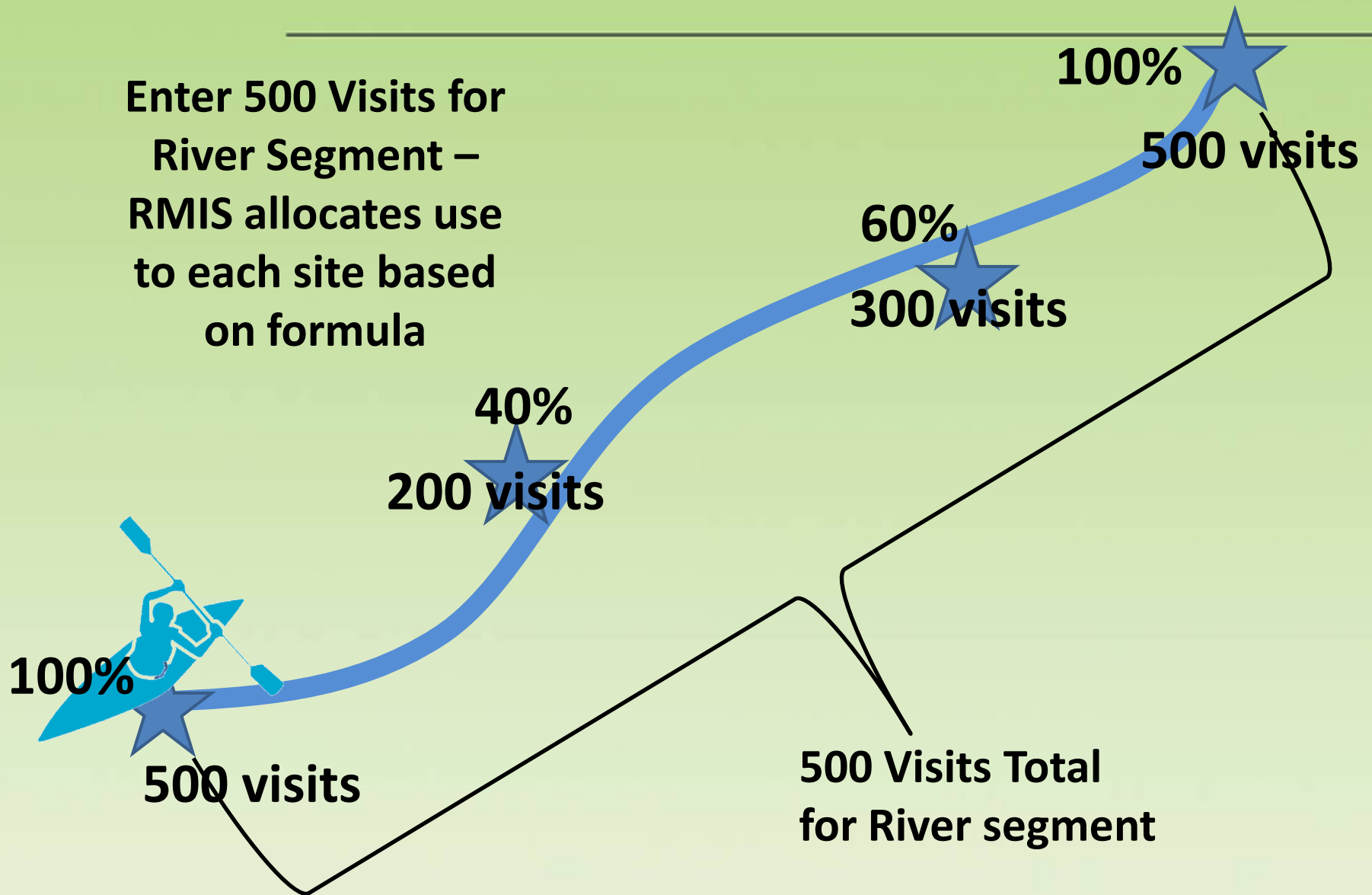
# Corridor Concept



The corridor formula takes a known amount of use along a corridor and allocates that use to one or more sites along the corridor. This allows you to show the use occurring at each site without double, triple, or quadruple counting one visitor.



# Corridor Concept



# Corridor Concept

Example Formula: Payette River – Main stem

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- Site: Confluence Put-in – 100%
- Site: Chief Parish – 40%
- Site: Bogus Creek – 60%

Example Formula: Payette River – Main stem

Site: Confluence Put-in – 100%

Visitor Activity	Percent Part.	Avg. Hours
Boat Launching	100.00%	0.60

Example Formula: Payette River – Main stem

Site: Chief Parish – 40%

Visitor Activity	Percent Part.	Avg. Hours
Picnicking	100.00%	0.75

Example Formula: Payette River – Main stem

Site: Bogus Creek – 60%

Visitor Activity	Percent Part.	Avg. Hours
Picnicking	100.00%	0.75
Photography	50.00%	0.2

# Corridor Concept

Example Formula: Payette River – Main stem

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- Site: Beehive Bend Take-out –  
100%
- Site: Dispersed Payette River –  
100%

Example Formula: Payette River – Main stem

Site: Beehive Bend Take-out – 100%

Visitor Activity	Percent Part.	Avg. Hours
Boat Launching	100.00%	1.5

Example Formula: Payette River – Main stem

Site: Dispersed Payette River – 100%

Visitor Activity	Percent Part.	Avg. Hours
Row/Float/Raft	70.00%	2
Canoe/Kayak	30.00%	1.5



# Corridor Concept

## Example Formula: Payette River – Main stem

- Site: Beehive Bend Take-out – 100%

Visitor Activity	Percent Part.	Avg. Hours
Boat Launching	100.00%	1.5

- Site: Dispersed Payette River – 100%

Visitor Activity	Percent Part.	Avg. Hours
Row/Float/Raft	70.00%	2
Canoe/Kayak	30.00%	1.5

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# Switch to RMIS Program

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# Master Formula List

## Master Formula List contains formulas

- Created from the Master page, or
- That were copied there using the “Copy to Master” button.
  - Formulas created from site, river, road, etc. pages are not automatically copied to the Master List
  - Most users never copy their formulas to the Master List

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## Advantages of copying formulas to the Master List

- Saves formulas for reuse,
- Allows the use of multiple formulas.

Always remember to copy  
your formulas to the Master List

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# Using Multiple Formulas

Why might you want to use more than one formula?

- Seasonal differences in the types of use.
- A different use that occurs periodically.

## Why might you want to use more than one formula?

If you use multiple formulas, remember RMIS only uses one formula at a time - the formula associated with the location when you add your visits. If you apply a formula after adding visitor use, RMIS will not use that formula for the use you just added.



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# Switch to RMIS Program

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# Tips for developing Formulas?

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- Your formula should reflect the use for the specific area and not simply duplicate another area's formula.
  - The total number of visitor hours for a day use formula should be the same as the average length of stay.

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- If an area has overnight use, you can create a formula that reflects daily use or reflects the visitor's total length of stay. Make sure you report visits that match your formula.
  - Go easy on yourself and include only the primary activities you are managing at that site. Don't bother with every single activity that has ever occurred there unless it has significance to management decisions.

- Look at your formula with a critical eye, especially with the average hours and percent participation. Don't let your formula look like this:

Visitor Activity	Percent	Average Hours
Fishing - Freshwater	100.00%	1.00
Nature Study	100.00%	1.00
Power Boating	100.00%	1.00
Row/Float/Raft	100.00%	1.00
Swimming	100.00%	1.00

- Once a year, look at you formulas to see if they are still accurate.



can decide if an activity should be included in the formula.

You do not have to include all activities in the formula.

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# Summary

You will be able to . . .

- Explain how the RMIS database uses formulas,
- Develop a formula from observational data,



You will be able to . . .

- Explain the different methods for counting overnight use,
- Create and edit a formula,

You will be able to . . .

- Apply the corridor concept when developing formulas for rivers, roads, trails, areas, and SRPs, &
- Use the Master Formula List when creating and using multiple formulas.

# Enjoy Your Public Lands

